ABSTRACT OF THE DISCLOSURE

[0041] Sound absorption backings for ultrasound transducers are provided. A block of material with similar acoustic impedance to the transducer material is provided adjacent to the material. For example, a solid metal block of material with acoustic impedance that is similar to the acoustic impedance of silicon substrate used for a CMUT is provided. Since the solid block of material may provide high heat conductivity and a stiff mechanical support without acoustic attenuation, the block is formed to prevent reflections of acoustic energy back toward the sensor. In one embodiment, a Rayleigh dump is formed on a surface of the solid block of material away from the transducer material. Acoustically absorbing materials are provided along the surface with the Rayleigh dump. As acoustic energy propagates towards the surface, the acoustic energy is reflected at angles away from the transducer material. Some of the acoustic energy propagates through the surface into the attenuating material. After multiple reflections within the Rayleigh dump, the acoustic energy is eventually dissipated through the acoustic attenuation of the additional material alongside the surface.